

THE CLAIMS

What is claimed is:

1. A method of allocating storage to a system user of a storage area network, the storage area network including storage and a plurality of servers accessing the storage, the method comprising steps of:

identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user when a server is allocated to the system user;

generating a plurality of replicas of each identified master storage image prior to at least one server being allocated to the system user; and

allocating a selected replica of the plurality of replicas of the master storage image to each server allocated to the system user.

2. The method according to claim 1, further comprising steps of:

de-allocating an allocated replica from the system user each time a server is de-allocated from the system user; and

assigning the de-allocated replica to a pool of de-allocated replicas.

3. The method according to claim 2, wherein the pool of de-allocated replicas is configured to automatically scrub all replicas in the pool of de-allocated replicas asynchronously from de-allocation the step of de-allocation.

4. The method according to claim 3, wherein the pool of de-allocated replicas is scrubbed when a number of de-allocated replicas assigned to the pool of de-allocated replicas equals a predetermined number.

5. The method according to claim 3, wherein the pool of de-allocated replicas is automatically scrubbed by reformatting.

6. The method according claim 1, wherein each replica is a logical volume.

7. The method according to claim 1, wherein the system user is one of a customer and an application.

8. The method according to claim 1, wherein the master storage image is pre-configured with data and state information that is associated with a system user.

9. A method of allocating storage between system users of a storage area network, the storage area network including storage and a plurality of servers accessing the storage, the method comprising steps of:

identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user, each master storage image including both a read-only data portion and a writeable data portion;

generating a read-only copy of the read-only data portion of each master storage image;

sharing the read-only data copy of the read-only data portion of each master storage image across the plurality of servers;

allocating the read-only copy of the read-only data portion of a selected master storage image to each server allocated to the system user; and

allocating a separate writable data volume of the writable data portion of the selected master storage image to each server allocated to the system user.

10. The method according to claim 9, further comprising steps of:

de-allocating the read-only copy of the read-only data portion of the selected master image from the server to which the read-only copy was allocated when the server is de-allocated from the system user; and

de-allocating the writable data volume of the writable data portion of the selected master storage image that was allocated to the de-allocated server.

11. The method according to claim 10, wherein the step of de-allocating the writable data volume includes the steps of:

assigning the de-allocated writable data volume to a pool of de-allocated writable data volumes; and

scrubbing any writable data volumes assigned to the pool of de-allocated writable data volumes asynchronously from the step of de-allocating the writable data volume.

12. A storage area network, comprising:

a plurality of servers coupled to a storage; and

a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user, the storage provisioning device identifying at least one master storage image that is stored in the storage and that will be associated with a system user when a server is allocated to the system user, the storage provisioning device further generating a plurality of replicas of each identified master storage image prior to at least one server being allocated to the system user; and allocating a selected replica of the plurality of replicas of the master storage image to each server allocated to the system user.

13. The storage area network according to claim 12, wherein the storage provisioning

device de-allocates an allocated replica from the system user each time a server is de-allocated from the system user removes a server, and assigns the de-allocated replica to a pool of de-allocated replicas.

14. The storage area network according to claim 13, wherein the pool of de-allocated replicas automatically scrubs all replicas in the pool of de-allocated replicas asynchronously from de-allocation the step of de-allocation.

15. The storage area network according to claim 14, wherein the pool of de-allocated replicas is scrubbed when a number of de-allocated replicas assigned to the pool of de-allocated replicas equals a predetermined number.

16. The storage area network according to claim 14, wherein the pool of de-allocated replicas is automatically scrubbed by reformatting.

17. The storage area network according claim 12, wherein each replica is a logical volume.

18. The storage area network according to claim 12, wherein the system user is one of a customer and an application.

19. The storage area network according to claim 12, wherein storage provisioning device pre-configures the master storage image with data and state information that is associated with a system user.

20. A storage area network, comprising:
a plurality of servers coupled to a storage; and

a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user, the storage provisioning device identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user, each master storage image including both a read-only data portion and a writable data portion, the storage provisioning device further generating a read-only copy of the read-only portion of each master storage image and sharing the read-only copy of the read-only portion of each master storage image across the plurality of servers, allocating the read-only copy of the read-only portion of a selected master storage image to each server allocated to the system user, and allocating a separate writable data volume of the writable data portion of the selected master storage image to each server allocated to the system user.

21. The storage area network according to claim 20, wherein the storage provisioning device de-allocates the read-only copy of the read-only portion of the master image from the server to which the read-only copy was allocated when the server is de-allocated from the system user, and de-allocates the writable data volume allocated to the server that has been de-allocated.

22. The storage area network according to claim 21, wherein when the storage provisioning device de-allocates the writable data volume, assigns the de-allocated writable data volume to a pool of de-allocated writable data volumes and scrubs any writable data volumes assigned to the pool of de-allocated writable data volumes asynchronously from when the storage provisioning device de-allocates the writable data volume.